

103

THE NATIONAL ACTION PLAN FOR GLOBAL CLIMATE CHANGE

Y4.P96/10:

S.HRG. 103-454 HEARING
BEFORE THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
AND THE
SUBCOMMITTEE ON CLEAN AIR AND
NUCLEAR REGULATION
UNITED STATES SENATE
ONE HUNDRED THIRD CONGRESS

FIRST SESSION

OCTOBER 25, 1993

INDEPENDENT OF DOCUMENTS
NEOLOGY



JUN 24 1994

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NEOLOGY

Printed for the Committee on Environment and Public Works

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1994

73-877 ||

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402

ISBN 0-16-043991-4

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(III)

THE NATIONAL ACTION PLAN FOR GLOBAL CLIMATE CHANGE

TUESDAY, OCTOBER 26, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR AND NUCLEAR REGULATION,
Washington, DC.

The committee and subcommittee met, pursuant to notice, at 10:06 a.m. in room SD-406, Dirksen Senate Office Building, Hon. Max Baucus [chairman of the committee] presiding.

Present: Senators Baucus, Chafee and Lieberman.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. The hearing will come to order.

The Committee on Environment and Public Works and the Subcommittee on Clean Air and Nuclear Regulation are meeting this morning to consider the Clinton Administration's new action plan for global climate change. I want to welcome our distinguished witnesses and guests to the committee.

The British writer, H.G. Wells, said some decades ago, "Human history becomes more and more erased between education and catastrophe." This was never more true than it is with respect to global climate change. It is particularly appropriate for hearings like this one that while the scientific community generally accepts global warming as real and dangerous, the public, as a whole, is not entirely convinced. We still need to educate.

Those who do not believe in climate change speak with loud voices and at times they are compatible of frustrating progress. However, despite this, there are two undisputed facts are global climate change. First, carbon dioxide, the waste gas produced by burning coal, oil and wood has been accumulating in the atmosphere over the earth for the last century. Second, the more carbon dioxide there is in the atmosphere, the more heat it traps and the more rapidly the earth's climate changes. Scientists agree that given these facts and with CO₂ accumulation since the industrial revolution, the earth's climate is likely to warm by several degrees during the next decades.

The Intergovernmental Panel on Climate Change concluded in 1992 that the doubling of carbon dioxide in the atmosphere by the year 2100 without remedial action will result in an average global increase of 3 to 8 degrees Fahrenheit. The National Academy of Sciences says that a doubling of preindustrial revolution levels of

carbon dioxide will occur by the middle of the next century if left unchecked resulting in an average global temperature rise of 4.5 degrees Fahrenheit.

The uncertainty is not whether the phenomenon exists, but precisely how big it will be and what effects it will have on particular regions of our country and the world. There is clearly enough information about climate change for us to get to work. A warmer climate will cause higher seas and thus increase flooding, erosion of coastal areas and the drowning of coastal wetland. Climate change will likely make inland areas drier and hotter, thus making water resources even more scarce. Temperature changes will affect agricultural lands in unpredictable ways making food more scarce.

The United States has no choice but to lead. We must lead in cutting greenhouse gas emissions and we must lead in research and development of new technology. First, we are the largest emitter of greenhouse gases. Twenty percent of all greenhouse gas emissions come from the United States. We contribute more, so if the problem is to be solved, we must do more. Second, our scientific capacity is greater. We can conduct the research and develop the technology that developing countries need to slow global climate change. This is essential because developing countries, particularly Asia, are growing and adding industrial capacity much faster than the United States or Europe. So we need to curb our own emissions and we need to develop the technology both to make our own actions more efficient and to help other countries to find ways to reduce emissions. That is precisely what the Clinton Administration's Climate Change Action Plan envisions. Education is beginning to pull ahead of catastrophe.

The Clinton Administration's National Action Plan is solvent. It requires genuine cuts in greenhouse gas emissions, it offers realistic ways to achieve them. I commend President Clinton for using his Earth Day address to go beyond what is required by the Convention on Global Climate Change, and far beyond the policy of the last Administration to commit the United States to reduce American emissions of greenhouse gases to 1990 levels by the year 2000.

Just as important, this is a plan the public must accept. President Clinton asks, "not for more bureaucracy or regulation or unnecessary costs, but instead for American ingenuity and creativity to produce the best and most energy efficient technology." The plan thus reflects modern environmental policy. It uses the best ideas of industry, of scientists and environmentalists alike, and it uses carrots rather than sticks. It also uses existing laws rather than asking Congress to write new ones. That's good. When we have good laws, we should use them instead of adding years of congressional debate and layers of new office. This provides flexibility that the American business community has been continually asking us for. I hope the American business community accepts that challenge.

That is the good news but as always, important questions arise when we talk about setting priorities and spending money. These are questions I plan to address during the hearing, in particular, the question of how all this is paid for.

Implementing the climate change action plan will cost the Federal Government about \$1.9 billion through the year 2000. The Ad-

ministration has not proposed specific funding for it and because the Budget Act requires us to cut spending or raise taxes if we want a new program, we can't justify all the money. We have to account for it, where will the money come from to implement this plan? I also want to know where EPA's share of the work, approximately \$65 million per year, will come from. I also want to know how we're going to judge our progress between now and the year 2000; where are the benchmarks. Finally, what will we do if the voluntary efforts envisioned by the plan don't pan out? How will we reach our goals?

Despite these questions, the Administration's action plan is a sign we are on the right road. I think that if H.G. Wells were to appear here in his time machine and sit in to listen for a while, he would find us following his advice; he would find education pulling ahead of catastrophe.

Now, I'd like to call on Senator Lieberman, chairman of the subcommittee, who is one of the Senate's foremost leaders in the environmental area. Thank you, Senator, for all the work you are doing.

**OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S.
SENATOR FROM THE STATE OF CONNECTICUT**

Senator LIEBERMAN. Thank you, Mr. Chairman. It is a pleasure to join with you on behalf of the subcommittee in convening this hearing. I appreciate your comments.

As to the general problem of global warming, I will, in that sense, generally associate myself with what you've said and thereby will be able to shorten my remarks. We are now at a point fortunately where we have acknowledged that there is a global warming problem and the question is how best to deal with it. I think in doing so, we are heeding some clear signs and acting as leaders. These are problems that require education to alert the people to the consequences of their actions and behavior which they may not be aware of, and ultimately they require leadership through law because if the course of events is allowed to continue as it has it has been going, we are all going to suffer and future generations are going to suffer, so I take this to be a particularly appropriate and important place for environmental leadership.

In that spirit, I appreciate the work that has been done by the Administration in bringing forward this climate change action plan. I must say, however, that I remain concerned about whether the plan will succeed in achieving President Clinton's stated and worthy objective of reducing greenhouse gas emissions by the year 2000 to 1990 levels.

Personally, I'm a strong supporter of the approach that this plan relies on in great part which is the nontraditional, noncommand and control approach to environmental protection, including market-based solutions, technical assistance, financial incentives and public-private partnerships, but those systems, those that rely on alternatives to traditional command and control, must have safeguards. To work, they must have firmly stated environmental objectives attached to them and a method for measuring whether

or not those objectives are being achieved along the way with the goal that's been set in the plan.

That is my fundamental concern with the plan as I have seen it, which is that there is no system for tough, hard, interim measurements of whether our Nation is moving toward the goals that President Clinton has set out for us by the year 2000. I don't want to arrive at the year 2000 and find that we are way behind the President's commitment and unable to essentially play global warming catchup at that point. It is critical, I think, that we have assurances that there will be a thorough and clear and tough process for evaluating how we are doing with time allowed for major readjustments if we are not meeting the goals.

I understand that the Administration may be working on establishing this kind of process now and I hope that our committee can have a look at that plan as soon as possible.

My second concern with the plan is that I worry that it fails to adequately tackle emissions from the all-important transportation sector. To explain that, I have a bias which is a bias that has expressed itself over the last three or four years in work on this committee and on the floor and that is, I believe that increasing the corporate average fuel efficiency standards is the biggest single step that we can take to reduce carbon dioxide emissions. Each gallon of gasoline burned pumps 19 pounds of carbon dioxide into the atmosphere and the average car emits about 50 tons of carbon dioxide over its lifetime. Increasing fuel economy saves consumers money, reduces our dependence on foreign oil, and protects public health and the environment. In that sense, I think it is important to state that all of these things we do as part of the effort to deal with global climate change also have other very positive spillover effects beyond that particular problem.

I understand all too well because I've been through some losing battles in the last 4 or 5 years on this question that increasing the CAFE standards is very difficult politically but I also, as I'm sure the witnesses do, that failure to achieve our 2000 year goal will result in equally difficult political choices down the road.

In this regard, I admire the Administration's recent joint announcement with the automobile industry which included a commitment to work toward tripling fuel economy standards in the next 10 years but it is not clear to me—perhaps we can talk about this during the testimony today—how that proposal relates to the climate change plan. The plan states that there will be a process in the next year to examine regulatory and nonregulatory measures to improve fuel efficiency in an amount equivalent to at least 2 percent per year over a 10–15 year period, but if there are no interim improvements in fuel efficiency, how will these measures help us meet the 2000 year goal deadline.

We have not yet of course seen the details of the automakers commitment to the joint program. When we do—I hope this is the case—it will lessen my disappointment with the failure to include an aggressive CAFE program as part of this plan.

My final concern that I want to express here is the amount of Federal money that will require redirecting and to join with the Chair in concern about the peril that this may put the EPA budget at because I believe certainly that EPA's funds have already been

stretched extremely thin, making it very difficult for that agency to carry out the responsibilities that we have placed on it.

I appreciate the work that the Administration has done and yet wanted to share those concerns with these witnesses. I hope we can address them specifically in testimony and questioning.

Again, Mr. Chairman, thank you for your leadership all along the way in this cutting edge problem of global climate change and I look forward to continuing to work closely with you on it.

Senator BAUCUS. Thank you very much, Senator.

As I understand it, the four of you have prepared a joint statement, Mr. Sussman. I'll ask you now to give that statement and at the conclusion of your statement, I'll allow each of the other three to make whatever oral additional remarks that any of you may wish to make. Why don't you begin, Mr. Sussman.

Our witness today is Mr. Robert Sussman, Deputy Administrator of the U.S. Environmental Protection Agency. He is joined by the Honorable Mortimer Downey, Deputy Secretary of Transportation, Department of Transportation; Mr. Rafe Pomerance, Deputy Assistant Secretary for Environment and Development, Department of State; and Dr. Susan Tierney, Assistant Secretary, Office of Policy, Planning and Program Evaluation, Department of Energy.

Mr. Sussman, welcome back. You may begin. You've been here a couple of times before and we expect to see you many times in the future.

STATEMENT OF HON. ROBERT M. SUSSMAN, DEPUTY ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY HON. MORTIMER L. DOWNEY, DEPUTY SECRETARY OF TRANSPORTATION, DEPARTMENT OF TRANSPORTATION; RAFAEL POMERANCE, DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENT AND DEVELOPMENT, DEPARTMENT OF STATE; AND SUSAN F. TIERNEY, ASSISTANT SECRETARY, OFFICE OF POLICY, PLANNING, AND PROGRAM EVALUATION, DEPARTMENT OF ENERGY

Mr. SUSSMAN. You probably will.

It is a pleasure to be here this morning, Mr. Chairman. Thank you for the opportunity to present the President's Climate Change Action Plan. We appreciate the opportunity to combine our written testimony into a single statement for the record.

What I'd like to do today is to summarize the key features of the action plan which, as you know, was made available to the committee last week.

As you indicated, Mr. Chairman, the international scientific community agrees that climate change is the highest risk environmental problem we ultimately face. There is no doubt that human activities are increasing the atmospheric concentrations of greenhouse gases. Theoretical models predict that these increased concentrations will cause changes in regional and global climate systems, which could have serious adverse effects on human health, as well as on ecological and socioeconomic systems.

For these reasons, President Clinton committed his new Administration to produce a plan to return U.S. greenhouse emissions to 1990 levels by the year 2000. The Climate Change Action Plan ful-

fills that commitment. It provides a critical first step in addressing a long-term threat.

The Action Plan is the most specific, detailed and comprehensive plan produced by any nation to date to reduce greenhouse gas emissions. The plan also demonstrates that there is economic opportunity for the United States in taking on this challenge. The actions detailed in the plan will expand markets for important U.S. technologies and services, create jobs in those sectors, and help reduce the Federal budget deficit. Let me speak briefly about the development of the plan.

In developing the plan, the Administration drew on innovative ideas for people in business, labor, government and the environmental movement. After the President delivered his Earth Day speech, the White House hosted a conference on global climate change to explore cost effective ways of meeting the President's commitment. Prior to the conference, six working groups were established to identify and analyze specific actions, energy demand, energy supply, transportation, methane and other greenhouse gases, and joint implementation.

Two main principles guided the development of the plan. First, we recognized that achieving the ambitious goal of returning greenhouse gas emissions to 1990 levels could offer significant opportunities and we were determined to seize those opportunities. Second, the plan was built upon models of successful programs that already exist in the public and private sectors. The programs in the plan are targeted toward proven winners, toward investments in energy efficiency, and other technologies which would simultaneously reduce emissions and make the economy more competitive.

CLIMATE CHANGE ACTION PLAN

COST-EFFECTIVE

Value of Energy Saved



Private Cost
of Investment

**Value of Energy Saved is Greater
than the Private Investment Cost**

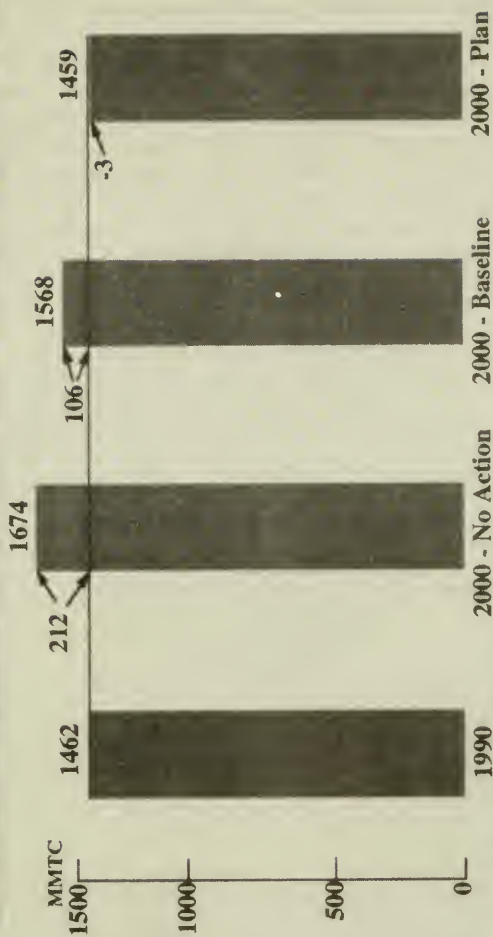
DATA SOURCE: Climate Change Action Plan, 10/19/93

Mr. SUSSMAN. If I can, I'd like to summarize the key elements of the plan and to complement my presentation, I would like to walk you through some charts we have prepared to describe some of the points that we want to emphasize.

Without the Climate Change Action Plan, emissions of major greenhouse gases are projected to grow by about 7 percent between 1990 and 2000 from 1,462 million metric tons of carbon equivalent which you see over on the left to 1,568 million metric tons. That is a gap of about 106 million metric tons and that is the amount of carbon emissions that we need to reduce in order to achieve stabilization.

CLIMATE CHANGE ACTION PLAN

GREENHOUSE GAS EMISSIONS RETURN TO 1990 LEVELS



DATA SOURCE: Climate Change Action Plan, 10/19/93

Mr. SUSSMAN. To achieve the goal of reducing greenhouse gases by 106 million metric tons, the plan will address emissions of a number of different greenhouse gases. The most important greenhouse gas, of course, is carbon dioxide. The plan will achieve 66 mmt CO₂ reductions from energy sources. In addition to the CO₂ reductions to be achieved from energy sources, we intend to achieve 10 million metric tons in CO₂ reductions from carbon sequestration and SINKS. We also intend to achieve 68 million metric tons in reduced methane emissions. Methane, as you know, is a potent global warming agent and reducing methane emissions is an important part of the plan. Finally, there will be 68 million metric tons in reduced emissions of three other types of greenhouse gases: first, HFCs; second, PFCs and finally, nitrous oxide.

CLIMATE CHANGE ACTION PLAN

GREENHOUSE GASES REDUCED BY 109 MMTC



62 Percent Comes from the Energy Sector

DATA SOURCE: Climate Change Action Plan, 10/19/93

Mr. SUSSMAN. To achieve these reductions, we intend to implement nearly 50 specific actions that touch every sector of the economy. This is an economy-wide problem and for that reason, it requires economy-wide solutions. As you'll see in this chart, we are achieving reductions in all of the energy sectors across the board. Let me show you how these reductions are distributed across sectors.

First, we are looking to achieve a 25 percent reduction from the residential sector; second, we intend to achieve a 16 percent reduction from the commercial sector; third, a 29 percent reduction from the industrial sector; fourth, a 12 percent reduction from the transportation sector; and finally, a 16 percent reduction from the energy supply sector.

In achieving these reductions, we intend to accomplish our goals in a cost effective manner in which we primarily harness market sources. What you'll see in this chart is that conservation and efficiency improvements account for about 70 percent of the reductions in the energy sector that we hope to achieve. The other reductions come from changes in fuel mix.

CLIMATE CHANGE ACTION PLAN

ALL ENERGY SECTORS CONTRIBUTE TO 66 MMT REDUCTION



DATA SOURCE: Climate Change Action Plan, 10/19/93

CLIMATE CHANGE ACTION PLAN

CONSERVATION & EFFICIENCY

70% →



DATA SOURCE: Climate Change Action Plan, 10/19/93

Mr. SUSSMAN. Mr. Chairman, you mentioned the commitment of governmental resources that the plan will require. We are contemplating governmental expenditures of about \$1.9 billion between 1994 and 2000.

Senator BAUCUS. Mr. Sussman, that last chart. If 70 percent is through conservation, and the remaining 30 percent is achieved through what? What is the blue?

Mr. SUSSMAN. The blue is changes in fuel mix.

Senator BAUCUS. Changes in fuel mix?

Mr. SUSSMAN. Right.

The point I want to make is that the commitment of government resources in this plan will leverage private resources very significantly. We're talking about governmental expenditure of approximately \$1.9 billion over a 6-year period. We contemplate that will stimulate over \$60 billion over the same time in private sector investment in energy efficiency, renewable energy and other technologies that help reduce greenhouse gas emissions. These investments in turn should pay substantial dividends to consumers and firms in the form of reduced energy costs. We contemplate over \$60 billion in reduced energy costs between 1994 and 2000 and continuing cost savings of over \$200 million between 2001 and 2010.

CLIMATE CHANGE ACTION PLAN

BUDGET DEFICIT REDUCED

Increase in
Federal Receipts
\$2.7 Billion
(1994-2000)



DATA SOURCE: Climate Change Action Plan, 10/19/93

Mr. SUSSMAN. The Action Plan establishes ground-breaking public-private partnerships with key industries across all sectors of the economy to reduce all types of greenhouse gases. For example, the plan contains new agreements with electric utilities to reduce greenhouse gas emissions, as well as agreements with electric motor manufacturers and industrial motor users. Agreements with chemical and aluminum producers will help reduce HFC and PFC emissions. The plan also includes measures to improve energy efficiency in the commercial, industrial and residential sectors.

Two actions contained in this plan will also help reduce the Federal budget deficit. For example, the plan will allow workers the option of taking either employer-paid parking of its cash value as increased income instead, providing a financial incentive to take public transportation or to car-pool. While the "cash-out" income would be taxable, new Federal revenues would only come from workers who voluntarily chose to exercise their new option.

The plan will also give private developers an opportunity to invest in efficiency upgrades and Federal hydroelectric dams and market the additional power in exchange for lease and in bonus payments.

Through this plan, the U.S. will aggressively promote more recycling, more efficient transportation systems, more reductions in harmful methane emissions from mining and agriculture. The plan protects forest resources that store carbon taken from the atmosphere. The plan also contains a pilot project on joint implementation in order to gain experience in evaluating the emission reduction potential of international investments. The plan will also limit emissions of chlorofluorocarbon substitutes with high global warming potential. It establishes a program to monitor the results of the plan and to modify the plan if necessary to adopt to changes in circumstances.

In conclusion, the Climate Change Action Plan reestablishes the U.S. as a world leader in protecting the global environment. We hope that it will be implemented in concert with other industrial countries as they move to produce their own detailed plans. The plan represents an aggressive first step by the U.S. that will help to build a healthier environment and a stronger economy for decades to come.

Thank you for the opportunity to testify and I look forward to answering questions.

Senator BAUCUS. Thank you, Mr. Sussman.

I'd like to give the opportunity for comments to each of the other three of you. Let me start with you, Mr. Downey.

Mr. DOWNEY. Thank you, Mr. Chairman. It's a pleasure to be here with you this morning.

We see transportation as a key element in the President's program to achieve the goal of reducing greenhouse gases by the year 2000. The main strategies include promotion of measures that will dampen the growth of vehicle travel, greater use of telecommuting and the development of fuel economy labels for tires. We believe that these strategies are meaningful and that their benefits are very conservatively estimated.

As far as commercial transportation is concerned, we found through the workshops held at the White House and other means

that the competitive forces in the marketplace are already driving further development of fuel efficient technologies and practices as fast as anything that could be obtained by government involvement.

With regard to autos and light trucks, the focus of the action plan is that which can be accomplished over the next 7 years, whereas other proposals, such as changes in the CAFE system, would have their significant effect on greenhouse gases after the turn of the century. Automobile fuel economy is still on the table and that will be one of the key issues examined over the next year by a White House-chaired task force looking at possible longer term measures to reduce greenhouse gas emissions in the transportation sector.

It should be noted, however, that modifications to CAFE are not an instant remedy. The National Academy of Science study two years ago concluded that the statute is seriously flawed. The Administration believes that other alternatives exemplified by the new clean car initiative may yield far better results over the long term although there may well be need for regulatory measures during the short run.

We want to identify more effective ways of reducing single occupancy vehicle travel and overall vehicle miles traveled absolutely. We will continue to move in that direction beyond the gains that can be provided by the parking cash out and beyond other steps that will reduce VMT that are already contained in some State air quality plans.

While VMT reduction efforts are an integral part of an incremental approach to global climate taken by the Administration, efforts that can be funded or otherwise enhanced by the landmark ISTEA and Clean Air Amendment legislation, being even more aggressive would encounter serious political obstacles. For example, a substantial rise in the gas tax would, in the view of many economists, be the most effective and economically efficient way to reduce greenhouse gases, but political and economic concerns caused even a modest tax to be dropped and reduced during the deliberations over the budget package.

As Secretary Peña observed last week, our goal has to be putting the management of travel on an equal footing with the planning of new transportation infrastructure so that State and local planning and community groups can properly integrate new projects with the environmental targets we want to achieve.

The Department of Transportation is committed to playing a key role in this important and ongoing effort.

Senator BAUCUS. Thank you very much.

Mr. Pomerance?

Mr. POMERANCE. Thank you, Mr. Chairman. It is a pleasure to be here this morning before this committee which has done so much fine work over the last decade in examining this issue.

I just want to make a few comments about the impact of this plan in the international context. First, I think the acknowledgment by the Administration of the seriousness of the science related to global warming is an important step in bringing together an international consensus on this issue. The President made a clear statement on the threat posed by the greenhouse problem in his

White House announcement last week. I think that gives added momentum to dealing with the issue.

I think that statement and the overall plan will improve the U.S. position in international negotiations that we will be seen as a more serious player in the sense of wanting to deal with this issue.

Second, the plan is a real leadership statement for two reasons. One, the plan is of high quality, very specific measure by measure. The actual reductions associated with each measure are clearly set out. I think that will provide other governments that look to the United States with a chance to find opportunities for reduction in their own countries.

The most important international aspect of this plan is the U.S. initiative on joint implementation. Joint implementation, which is a mechanism allowed under the Convention, permits governments to reduce emissions in concert with other governments through a number of mechanisms. The plan contains a proposed pilot program on joint implementation which sets out criteria for operating such a system. This plan will be in the Federal Register for comment shortly. We look forward to receiving the views of environmentalists, industry, local and State governments and other interested parties.

Just to mention the key principles involved in the joint implementation initiative, one is that joint implementation projects will be voluntary between parties and governments. Second, the way these criteria are set out, they require that successful joint implementation of these projects have mechanisms for monitoring and clarification so that projects can be flexible. That is to say the new implementation projects can handle new SINKS, the growing of trees, for example, or energy projects to get reductions abroad. Third, joint implementations must be additional. They cannot simply be reflective of ongoing international trade but must clearly demonstrate that such projects would be additional, ongoing activities.

The final aspect is that this plan will be a part of the U.S. reporting that is done under the convention. This is not actually the final version of the report that we will submit to the conference parties. Rather, it will be one component, presumably revised somewhat, that is submitted in approximately a year. That report will contain elements of what other activities we are doing internationally, our research agenda, issues of adaptation and so on.

Thank you.

Senator BAUCUS. Thank you, Mr. Pomerance.

Dr. Tierney?

Ms. TIERNEY. Good morning, Mr. Chairman and Senator Lieberman.

It's a great pleasure to be here today on behalf of the Administration and with my colleagues to speak about our shared vision and commitment to this plan.

Since Mr. Sussman has read the statement that we jointly prepared for you, let me make a few comments with regard to the Department of Energy's commitment to this program. I just want to make five points this morning.

First, as Secretary O'Leary promised to Congress, this plan clearly makes use of smart energy policies. That is necessary because

energy practices lead to so much of the emissions of greenhouse gases. As the charts that you saw earlier show, energy use and production are the single largest source of greenhouse gas emissions—they are more than two-thirds of those emissions. To make the meaningful reductions that are necessary as part of the President's commitments, we have to do the smart energy practices.

Speaking for the Department of Energy, our commitment is backed up by budgets and priorities. Over 75 percent of the plan's program dollars for fiscal year 1994 and more than two-thirds of the program dollars over the rest of the decade will come from DOE funding.

It is important to mention in light of the comments that you raised at the beginning of the session, Mr. Chairman, that these DOE funds will come from within the targets that OMB has set for the Department of Energy. They will not be additional funds. They will come as a matter of reprogramming and reprioritization. We think these funds are appropriate because energy efficiency and clean energy production and use are the highest energy priority for the Department.

Second, this plan relies heavily on partnerships with the private sector. As Secretary O'Leary noted in her press conference when she presented the programs, voluntary is not a dirty word. We're particularly pleased with several of the voluntary programs that we'll be doing at the Department and in conjunction with the U.S. EPA. These are the Motor Challenge, the Climate Wise Program and the Climate Challenge Program, the last being principally with electric companies. Those two programs, the Motor Challenge and the Climate Challenge, are off to a great start. I have letters from over 60 utility companies that are expressing their clear commitments to reducing their greenhouse gas emissions. They will be working out negotiated agreements to firm up those commitments. I'm pleased to state that independent power companies through the National Independent Energy Producers and even Sun Oil Company are included in those agreements.

We note that Congress itself recognized the importance of voluntary programs when you set up as part of DOE's Energy Policy Act a program to be administered by the Energy Information Administration, EIA, to hold a database for voluntary emissions reductions. This database will allow companies and individuals and government agencies that make voluntary emissions reductions to record them in a place that is transparent to the public—they can see what has been done. We think this is an important feature of our partnerships in giving assurances to the public in tracking progress.

Let me mention that next week we will be holding our first series of workshops in implementing the guidelines for that database. We have invited a number of participants from all sorts of sectors and interested parties to make sure that database is reliable, is open, is what we need to put in place to make these commitments real. I should mention too that yesterday the EIA prepared its first inventory of greenhouse gases from 1985 to 1990. That was directed by Congress as part of the Energy Policy Act as well.

Third, the plan recognizes that energy efficiency can play an essential role in meeting economic and environmental needs over the next decades. As you saw on our charts, energy efficiency improvements will account for 70 percent of emissions reductions by the year 2000. Those efficiency gains come from all parts of the economy, they come from residential buildings, they come from residential heating and cooling systems, residential lighting, similar kinds of efficiency improvements in commercial buildings. In the industrial sector, they come principally from efficiency improvements in motors. In the electric generation sector, they come from fuel switching and efficiencies in the generation of power as well as the transmission of power. Finally, we have included efficiency improvements in motor vehicles. Efficiency is important for environmental protection and for competitiveness in the United States.

Finally, let me mention, as you already noted, our clean car initiative this is one of the other programs that the Administration has advanced for achieving significant efficiency gains over the long run. Although this is not directly part of the Action Plan that we have submitted for this decade, it is an important complement to our program in the motor vehicle sector.

Fourth, our plan does not rely exclusively on energy efficiency. We have cost-effective low- and no-carbon energy supply technologies as part of our diversified emissions reduction program. For this reason, there are investments in renewable energy advancement, as well as in field research and technologies in the electric generation sector.

Finally, the plan includes a pilot joint implementation program that Mr. Pomerance mentioned, in which U.S. organizations can cooperate with other countries in implementing measures to reduce net greenhouse gas emissions. We are very excited about the joint implementation pilot program which we see as an effective opportunity for all companies to find emissions reductions in the most cost-effective way. We think it is important for engaging other countries in emissions reductions and in advancing our national export objectives. We think that the pilot program we have proposed will be one in which we can work out many of the concerns that are raised about the joint implementation program and move forward in away that is good for our country.

Thank you very much for the opportunity to speak before you this morning.

Senator BAUCUS. Thank you very much, Ms. Tierney.

I guess the basic question here is how do we know this is going to work. A lot of questions come to mind. One is the obvious absence of traditional command and control provisions. We are not mandating that companies achieve certain increased energy efficiency and we're not mandating that people take certain actions which result in lower emissions of greenhouse gases. This primarily relies upon cooperation, upon partnerships, on voluntary efforts, and essentially, it moves toward a very admirable concept, in my view, of sustainable development. This is, in a certain sense, a watershed change; it's a major change and because it's a major change, even more directly it raises the question of will it work. How do we know that we will achieve the goal of 1990 levels by the year 2000?

I don't hear many benchmarks here, don't hear many interim numbers between now and the year 2000. I hear phrases like monitoring. I don't know quite what the monitoring is. I don't completely know how you arrived at your numbers.

Could you explain more precisely if you could, beginning with you, Mr. Sussman, what you can tell us that would help us know whether this in fact is really going to work. It's very important that we know that it's going to work because we don't want to mislead the public, we don't want to overpromise. There is a lot of cynicism in this country. Most people really don't believe government very much, not much of the time, certainly not when government makes promises it's going to achieve certain developments off into the future.

I commend the Administration seemingly not overpromising. This is not some big, grandiose scheme here. Rather, it is a series of 50 different actions, not very glamorous but nevertheless probably more realistic, more likely to achieve the intended result.

If you could give us a little more indication of why you think this is going to work, why you think it will achieve the intended results, we'd appreciate it.

Mr. SUSSMAN. I think the question is a very good one and a very appropriate one. Let me observe at the outset that command and control regulation doesn't always work either and that legislative measures are hard to enact in many cases. I think in this instance, we have a plan which is, as I said, largely premised on partnerships between government and the private sector to achieve voluntary, cost effective gains in energy efficiency.

There are some regulatory measures in this plan and we shouldn't overlook them. For example, we are going to put out a rule to control the emissions of methane from the landfills; we do intend to use our authority under the Clean Air Act to limit uses and emissions of HFCs. The Department of Energy is going to use its standard-setting authority under the Energy Policy Act. So there are regulatory measures here but I think you are right, the emphasis is on partnerships and the question is, will they work and how will we know if they don't.

In the case of EPA, we are building on our experience with the green programs, in particular, which we think——

Senator BAUCUS. The Green Lights Program, for example?

Mr. SUSSMAN. The Green Lights Program, the Energy Star Buildings Program, the Golden Carrots Program which we've used for energy efficiency refrigerators, the Gas Program for emissions from natural gas pipelines. These are not new programs.

Senator BAUCUS. Do you know how much greenhouse emissions have been reduced as a consequence of ongoing, existing programs? Are those measurable? Have you attempted to measure them?

Mr. SUSSMAN. I think they are measurable. As part of our Green Lights Program, for example, we have very good numerical measures of the number of lighting appliances that have been replaced and the increases in energy efficiency that we've achieved as a result of turning over the lighting stock in commercial buildings.

I want to emphasize as we implement these programs, we are going to monitor progress very closely. Under Green Lights, we are going to track the number of companies that sign up; we're going

to try to quantify the commitments those companies have made to replacing lighting appliances; we are going to ask those companies to give us status reports regularly to make sure that they are, in fact, doing what they committed to do. We are going to do the same thing under the other programs.

For example, we have commitments from chemical manufacturers to reduce emissions of HFC 123 by 50 percent. We are going to work very closely with those companies and track their progress in meeting those commitments.

So I think in all of these programs, our effort is going to be one of making sure that we have commitments from the private sector which are clear and which are definite, which have time lines, which have measurable benchmarks, and which result in status reports we can get as we go down the road. If we're not making the type of progress that we expect to make, we are going to regroup.

I think that continual monitoring, regrouping and reexamination of progress is an approach that the entire Administration is taking.

Senator BAUCUS. Will you have the data to know the degree to which you are meeting your objectives on a yearly basis or biennial basis. Are you confident in each of your sectors, Transportation, EPA and Energy, that you'll have the data to know whether you're meeting your objective on say a yearly basis?

Mr. SUSSMAN. We will make every effort to get that data. For example, under the Clean Air Act, starting this year electric utilities are going to be implementing continuous monitoring requirements for CO₂ emissions. This is data which I think will be very valuable in tracking the progress we're making.

Senator BAUCUS. Are your gains expected to be on a straight line basis or is it more exponential?

Mr. SUSSMAN. I think that varies by program.

Senator BAUCUS. Do you have the data to know?

Mr. SUSSMAN. I don't know whether we can say we're going to make straight line, year-by-year progress toward our goals but we're certainly going to have definable year-by-year targets for the EPA programs. If we meet those targets, I think we will feel we are on course to achieve our ultimate goals in the year 2000.

Senator BAUCUS. Ms. Tierney, does Energy have a list of data?

Ms. TIERNEY. Absolutely. I mentioned in my oral statement the inventory results just published by the Energy Information Administration. That inventory is based on real data from the production sector, and very detailed models of energy use by different end-using sectors. It includes emissions from both production as well as from natural sources. We are committed to keeping track of the emissions reductions associated with our programs. Many of the programs that are part of the partnerships or voluntary programs are based on audit results and audit estimates of actual programs that would be put in place, changes in light bulbs and heating systems, and cooling systems in buildings.

Senator BAUCUS. To answer my question, if you were to come back before this committee a year from now, would you be able to tell us the degree to which to date the degree to which the Department of Energy plan is achieving its results?

Ms. TIERNEY. Absolutely and we will count on you asking us to do that.

Senator BAUCUS. That's constructive, that's helpful. I commend the Administration. I think it's very good and it's called for in the Convention in Rio and it's probably more than most countries will jump to adopt in the short term. The United States is showing leadership. In my view, it's essential that we provide that leadership and to get other countries to come along and do what they know they should do. The reason I'm asking these questions is to help us achieve that goal. I will from time to time ask you to come back before this committee to determine whether or not we're achieving our objectives and to discuss whatever changes and modifications we have to make to achieve them. I hope we don't have to make many changes but it is important that we keep on track and follow up and follow through so as to not mislead the public by making grandiose statements and not achieving results.

I'd like to now turn to Senator Lieberman.

Senator LIEBERMAN. Thank you, Mr. Chairman.

I'm going to pick up in a moment on some of the questions you've been asking. I wanted to start with one of the bright spots in the program and just ask you, Mr. Sussman, if I heard you right and I think I did but I want you to talk a little bit about it. We've talked so much even here about what is asked of people either voluntarily or as a result of command and control and a lot of fear is expressed about the cost of complying with the changes necessary to deal with this problem of global climate and global warming.

If I heard you correctly, you have estimated that there would be \$60 billion in produced energy costs over this 6-year period until 2000 and then \$200 billion in the first decade of the next century, is that right?

Mr. SUSSMAN. Absolutely.

Senator LIEBERMAN. Those are powerful numbers and I think it's important to stress those because they will run through every family budget in America and every business budget, and in that sense, will help us take a step in the whole process of trying to make American business competitive because it will reduce energy to that extent.

Let me come back to this question that you discussed with Senator Baucus which I mentioned briefly in my opening statement which is I admire the extent to which we are trying here to do this without relying exclusively on traditional command and control, and I think it's important not to just go to the carrot because there is always going to be a need for something of this type to create incentive for compliance because we're talking about change and there's a natural human resistance to change.

What are the plans to set clear guideposts along the way to 2000 as to how we're doing? Are you intending to set some either sectional goals over the time to 2000 over overall goals by which we can measure achievement here?

Mr. SUSSMAN. We obviously need benchmarks for how our programs are performing and we are in the process of developing them. Let me mention some of the things that we're going to do.

First, the White House is going to chair an interagency group to monitor and evaluate the functioning of the plan. We're going to hold a conference in 6 months to examine the progress. We're also going to finance some interim milestones that we will use as we go

down the road. It would also I think identify new opportunities to reduce emissions that we have discovered during that 6-month period.

In 1994, we expect to submit our national action plan to the conference of the parties as required by the Climate Change Convention. The preparation of that plan will give us an additional opportunity to regroup and make sure that we're on course. If we're not, we can make corrections in the course of preparing the plan.

It is the Administration's intent to review the plan and revise it if needed every 2 years. In other words, there will be a biannual review, an effort to see what progress has been made, whether we are falling short, and whether we need to do more.

I have to emphasize that I personally agree that we will need milestones and benchmarks. I think you can expect to see us develop those in the next several months as we prepare for the 6-month conference that we intend to hold.

Senator LIEBERMAN. I appreciate that answer very much. Again, while I commend the movement toward volunteerism and nontraditional command and control, it just seems to me that when you go that way, it's even more important to have milestones and benchmarks.

Let me ask you this. Do you think you need more authority to effectively implement such a system? Do you need legislative authority?

Mr. SUSSMAN. I don't see the need for it at this time. If it turns out as we go down the road that we're not making progress, I think we'll look at all options.

Senator LIEBERMAN. At this point, is it clear who will do the monitoring?

Mr. SUSSMAN. Each agency I think will have responsibility for monitoring the progress being made on those programs which have been assigned to the agency. The White House, through the mechanism of this interagency task force, will have responsibility for monitoring the effectiveness of the plan as a whole.

Senator LIEBERMAN. I think one of the most innovative provisions in the plan is this proposal that employees are given the option of free parking spaces or cashing out for the parking spaces as an incentive to move away from the single worker in a single car. I wondered if you would just take a minute to explain the program a little bit more and I'd also be interested in knowing how it relates to the provision in the Clean Air Act that requires large employers in the Nation's most severely polluted areas to increase passengers in per home to work trips?

Mr. DOWNEY. To describe the general thrust behind the proposal, it's one in that class you mentioned of getting away from command and control and really trying to create incentives. What it does is look to employers who are now financing through cash payments the provision of parking to their employees and allowing them—in fact, requiring them to offer the same amount of cash to the employee if they choose to do something other than drive solo and park.

Senator LIEBERMAN. To car pool, take Metro or whatever.

Mr. DOWNEY. The amount the employee receives could either be the amount of the parking or a transit benefit under the Tax Code,

the \$60 transit benefit and the employee would make whichever choice made economic sense.

Some experience has been accumulated with a comparable system in California and there has been clearly a radical shift in peoples' travel behavior. Free parking has proven to be a very large incentive for people to use their automobiles but when offered the opportunity to take the cash, even though the cash would become taxable income, they rethink their behavior and have moved in very significant percentages to other kinds of behavior.

Under the proposal as it is structured, no one loses. The employee gets the opportunity to travel to work in a means that they are comfortable with, they receive more cash, and the Federal budget would be improved by virtue of taxes collected on the income. We think it just has all kinds of strong potential.

Senator LIEBERMAN. I take it this requires legislative action?

Mr. DOWNEY. This would require a change in the tax code to insert that if an employer provides parking to the employee and pays a cash amount to secure that parking, it would only be deductible as a business expense if the offset option were also provided to the balance of the employees.

Senator LIEBERMAN. So the implementation of that is going to await presumably the next time we have a tax bill?

Mr. DOWNEY. That's correct.

Senator LIEBERMAN. Which is probably not one of the things that members of Congress are looking forward to.

Last, can you briefly relate it to the Clean Air Act provisions?

Mr. DOWNEY. Yes. I believe this will be a strong tool for those employers who are required under the Clean Air Act to change travel behavior and reduce the number of drivers in their employment mix. This would be one more way that they could achieve that. EPA has indicated that if its provision is put in place, they could consider simplifying the process so that it would be required for employers under the Clean Air Act.

Senator LIEBERMAN. Thank you.

Thank you, Mr. Chairman.

Senator CHAFEE. Thank you, Mr. Chairman.

First, I'd like to note with considerable pleasure that this is Mr. Pomerance's first voyage up here as a government employee in his present capacity. I did want to pay tribute to Mr. Pomerance. He and Gus Speth years ago convinced me that we needed to address the two issues of climate change and the destruction of the ozone layer. We held some hearings here, about three days of hearings in June of 1986 and based on those, I'd like to think that was the kickoff of the large media interest in the subject. Now, it's just accepted. In those days, we struggled to get a Chief of State to mention it in a speech and now entire speeches on climate change, for example, are given on the subject. So Mr. Pomerance is entitled to a lot of credit.

When you were in the other role, you were tough on some of our actions. I must say as I looked over this "action plan" here, I was wondering and it did cross my mind—I won't ask you this but it did cross my mind what would Rafe Pomerance with Worldwide Resources Institute say about this action plan. You don't have to answer that.

Mr. POMERANCE. I developed one last night.

Senator CHAFEE. Yes, you've always been good at constructive declarations.

Here is my question. It seems to me there is a very, very big difference between emission and concentration. Concentrations are, as I understand it and I'm anxious to be corrected if I'm wrong, concentrations of greenhouse gases in the atmosphere are going to increase quite substantially unless we take really dramatic actions on reducing emissions. In other words, stabilizing emissions does nothing toward concentrations. Is there an error in there, Mr. Pomerance?

Mr. POMERANCE. I think your basic comment is correct. As emissions continue concentrations rise, even if emissions are reduced below expected increased concentrations. However, the reduction of emissions below otherwise expected levels will slow the buildup of concentrations—that is the benefit of it—and keep concentrations at a level below where they would otherwise be.

Senator CHAFEE. Although concentrations will continue to rise?

Mr. POMERANCE. They will continue to rise.

Senator CHAFEE. The rate of increase will be decreased as a result of doing something toward stabilizing emissions?

Mr. POMERANCE. Right.

Senator CHAFEE. But nobody had better go out of here saying three cheers, great things are accomplished even assuming the voluntary action plan you've outlined is realized?

Mr. POMERANCE. Right. I think that is acknowledged in the plan in the sense that it's repeated several times, and I think the President said it the other day, that this is a first step and the plan has a lengthy portion of it devoted to a view of the long term, long term meaning close to thousands. That is to say that we need a continuing influx of new technology that produces zero or low greenhouse gas emissions and that we can't think of this as the first and only step. This is a long-term problem and requires a vision that certainly extends beyond 2000.

Senator CHAFEE. No one can argue with the system. You're starting on a long road and you're taking steps but at the same time, the concentrations are going to increase in I think an alarming fashion. How are we ever going to reduce emissions enough to really affect the concentration?

Mr. POMERANCE. I think that is addressed in the long term portion in which we'd really have to develop the backstep technology that are required to deal with this in the long run. In fact, the task force established is to be led by three White House groups—the Office of Science and Technology Policy, the National Economic Council, and the Office of Environmental Policy—to look at the long-term issues and to look at the entire Federal budget and research effort on that question. We've waited a long time to address this issue and it can't be done inside a decade.

Senator CHAFEE. Let me ask you whether this business about the forestry action and increasing the so-called forest sinks you have in there, which as I understand it is 1 percent of the total reductions achieved, whether that isn't a shell game because when you expect forests to reduce the projected emissions, then the trees fall over or

are cut down and themselves create the problem, so it creates as much problem as you reduce. Isn't that true?

Mr. POMERANCE. If trees are grown where there were none before they created carbon sink, therefore more carbon is sequestered.

Senator CHAFEE. For a while.

Mr. POMERANCE. For a while.

Senator CHAFEE. And then?

Mr. POMERANCE. If the forest is maintained in a sustainable way, that is to say as many trees are grown as are cut to maintain the existing carbon storage. If, however, a forest were grown and then simply burned, a forest fire destroyed it, it would vent the carbon into the atmosphere. That's the long-term management of the sinks.

Senator CHAFEE. That's right but I think the public has got to understand that these forests have got to be there for the long haul and hopefully increases. That's the way to get ahead of the game but eventually, emissions are going to equal what the sink has absorbed.

Mr. POMERANCE. It's important to note that the forests are a small portion of the program.

Senator CHAFEE. One percent.

Does this plan satisfy our international commitments and if so, what other countries are coming up with plans?

Mr. POMERANCE. In fact, the plan goes beyond the commitments of the key sections of the Convention which require developed country action because the President set a specific target and timetable. That is not explicitly required in the Convention. So in that sense, he has made a political commitment that goes beyond the Convention. I think that's been well-received internationally and I know that other governments have been looking forward for some time to this plan and will be carefully examining it and it will hopefully be useful to other governments in the preparation of theirs.

There have been a few other plans that have been circulated internationally. Canada I think last month produced a draft plan which is now going out for public comment throughout the country. Germany put a plan on the table at the August meeting of the International Negotiating Committee. It's easy to understand that most of the emission reductions in the German plan stem from the restructuring of the East German economy. Their energy prices are controlled and many industries are protected from international competition.

Ireland and Italy also put plans on the table but none of them are as specific as ours, I think particularly the European plans where there are measures stated, actual measurements with reductions associated with each measure. That is a unique feature of our plan.

Senator CHAFEE. Would you say our plan is boldest?

Mr. POMERANCE. I think certainly in its completeness, specificity and its inclusiveness of all greenhouse gases. I'm not sure that every other plan has HFCs in it, for example.

Senator CHAFEE. You don't know what the Swedes are going to pass?

Mr. POMERANCE. The Swedes have, I think, a plan. They have adopted some national measures, some taxes. I don't know that they've put a plan for the international community on the table yet.

Senator CHAFEE. Thank you, Mr. Chairman.

Any step forward is a good step but this is a tough situation as I mentioned before. We're not really wrestling with the concentrations as we should be. I think as time goes on we'll have to take more steps.

Senator BAUCUS. Thank you, Senator.

I'd like to ask Mr. Sussman and Ms. Tierney too the degree to which we're robbing Peter to pay Paul from other environmental programs. Ms. Tierney, you talked about reprogramming. Mr. Sussman, as I understand it, you'll reprogramming EPA too. That is, this is a \$1.9 billion Federal program for the year 2000. That's over like 6 or 7 years. By that mission, we're cutting \$1.9 billion from other programs. I'd like to know what you're cutting. Are you going to cut the Clean Air implementation program, are you going to cut the State revolving loan funds, are you going to cut Superfund? Are you going to try to cut those?

Mr. SUSSMAN. These are hard decisions and hard choices, there is no question about it. I would simply say that this action plan is a high priority initiative which addresses a very serious environmental problem. The President has wisely made the commitment to deal with the problem and we need to back up that commitment with resources and that's what we're going to do. I think we need to make the resources available if the plan is going to work and if we're going to achieve our targets.

You're absolutely right that the emphasis is on reprogramming of resources from within our budget. That's unfortunate but I think it reflects the budgetary realities that we have to deal with. Will we have to make reductions in outlays for other programs? We will, and those will be hard choices that we will think long and hard about.

Senator BAUCUS. What is your present inclination, best guess of what is likely?

Mr. SUSSMAN. I'm reluctant to venture a guess at this point. We're looking at our options and working with OMB to develop our Fiscal Year 1995 budget. I don't know that at this point we've made any decisions.

Senator BAUCUS. What about spending dollars not only on research but also on effects if in fact global warming does occur and it causes changes in agricultural production and so forth, are any research dollars contemplated for the mitigating effects?

Mr. SUSSMAN. Others are more expert at this than I am I believe that there is a very large, government-wide research program to give us the better ability to quantify the rate of global warming and also to look at what impact has. We, within EPA, have allocated \$25 million for our share of this research program which will be the responsibility of our Office of Research and Development. My impression is that other agencies across the government are spending a lot more.

Senator BAUCUS. Your impression is correct when it comes to NASA. The total budget for a global change research plan is \$1.4

billion in Fiscal 1994, almost all of that lions share is NASA, about \$1 billion. Is that appropriate?

Mr. SUSSMAN. Personally, I think it's very appropriate that we continue to invest in research on climate change. If we are going to develop long-term solutions, we need to understand the magnitude of the problem, we need to understand the impacts of the problem and while we have I think a very well-founded sense of concern about climate change, we don't have all the answers. So I think the research is very much in order.

Senator BAUCUS. I encourage all of you very strongly to go back to OMB and don't just reprogram within your own departments and agencies, but that you get some reprogramming of the entire Federal budget.

Ms. Tierney?

Ms. TIERNEY. Could I add three points in addition to what Mr. Sussman has said? I think they are responsive to your questions.

At the Department of Energy, we have embarked on a priorities-driven budgeting process across the Department, across the defense programs, the energy programs, the science programs, and the environmental clean-up programs, so that the programs emphasize, including this, are the ones that receive the funding, and that we don't support nonpriority programs.

In that context, we are committed to these programs as *additional* energy efficiency and renewable energy programs, not ones that take away from previous energy efficiency and renewable energy programs.

Second, the Department of Energy has supported and is supporting right now approximately \$100 million in research on climate change and is part of a process that I will mention in my third point—that the Office of Science and Technology Policy has embarked on an interagency program to examine what other agencies are doing with regard to climate change research and expects to include within the scope of that program examining the role of mitigation and avoidance. So we are, like you, interested in seeing where we should be targeting those research funds in the most coordinated way possible.

Senator BAUCUS. I have a question about the parking cashout. I understand the Administration anticipates a \$2.7 billion surplus?

Mr. DOWNEY. Revenue enhancement over the 5 years as a result of this.

Senator BAUCUS. That's a lot of money. You mentioned California's program. Do you have a data generally off the top of your head that substantiates the \$2.7 figure?

Mr. DOWNEY. I could provide for the record the basis of the calculations. The percentage of shifts in behavior that were built into these estimates were actually far less than those people in California are putting forward as potential outcomes of the program.

Senator BAUCUS. Could you tell us more about the California program? Do you by chance know?

Mr. DOWNEY. I do not know directly those numbers but the report we had done from people experienced in the California program, made the claim that up to 20 percent of single occupancy drivers could be encouraged to shift to other means by virtue of the

parking cashout. The estimates that are contained in the global climate change program are far less than that, far more conservative.

Senator BAUCUS. Why don't you earmark these dollars for climate change? They've got some good ideas?

Senator LIEBERMAN. You've got a pay as you go program here so I wonder why we're going to force EPA to squeeze it's already squeezed resources down further. I know we haven't adopted this yet.

Ms. TIERNEY. Could I make a point of clarification so that the written record indicates that the \$2.7 billion includes the revenue enhancement that would come also from a hydroelectric program and \$2.2 billion is for the pay-as-you-go program.

Senator BAUCUS. Senator Lieberman?

Senator LIEBERMAN. I agree with you. I was beginning to think I hadn't learned anything in my 5 years here but it does look from that chart like this overall plan is raising about \$800 million more than it's costing us, so assuming again that we adopt the change you've recommended for the revenue increase which has a very positive energy conservation and environmental impact, then your program is raising more than it's costing, so I'd hate to see you being forced to cut back on a lot of the other important programs that you are involved in.

I'd like to get back to the transportation sector. If you'd help understand these charts, it looks to me like we're saying as we attribute what the different sectors are contributing to the reduction of greenhouse gases, the transportation sector is contributing 12 percent as compared to industrial, 27 percent; residential, 25 percent; commercial, 16 percent; and energy supply, 16 percent.

I presume that transportation contributes more than 12 percent of the problem. Is that correct. I don't think you have any number about how much it contributes?

Ms. TIERNEY. 32 percent.

Senator LIEBERMAN. 32 percent.

Ms. TIERNEY. Of manmade emissions.

Senator LIEBERMAN. The question then becomes why we're not asking more of the transportation sector. That gets to my concern which I think was hinted at by others here this morning that maybe this is one area where we will need some sticks as well as carrots.

I gather from what you said earlier in your opening statement that the question of the Administration supporting an increase in the corporate average fuel efficiency standard is not over.

Mr. DOWNEY. It's not off the table.

Senator LIEBERMAN. There is a White House Committee set up which has a year to go back over this and then come back perhaps and share its conclusions?

Mr. DOWNEY. That's correct. Over that year, the White House group, with the help of the Transportation Department, Energy and others, will be looking at the automobile, both in terms of the CAFE side of it as well as means to reduce travel, and come up with a longer term strategy.

Our reluctance to include a CAFE increase in this program largely has to do with the timing, that with the time it would take to implement a new regulation and the time it would take for the

autobuilders to put that through their production cycle very little effect would occur before the year 2000. If we were to look for contributions to global warming commensurate with transportation shares, we would have to look at very severe measures affecting the use of vehicles and did not feel that those would be practicable.

In the long run, there is a lot more that can be done to make the automobile more fuel efficient and we agree with the point you made that this is not just a global warming issue, it's an energy security issue, it's a cost issue, it's a competitiveness issue. That's basically the reason for our encouragement by the agreement with the auto manufacturers to look a new generation of vehicles. That has two goals. I think most of the focus has been on a new class of vehicle that would be available in roughly the year 2010 that could triple fuel efficiency but the automakers, as part of this cooperative process, have also agreed to develop and commercialize technologies that can be applied to the existing fleet of vehicles and will, in fact, in our view, be applied toward improving the fuel efficiency of that fleet. That is why the climate change report suggests that improvements in fuel economy on the average of 2 percent a year are doable.

Senator LIEBERMAN. Two percent through 2000?

Mr. DOWNEY. Through 2000.

Senator LIEBERMAN. So we're going to see some effect of that agreement?

Mr. DOWNEY. We should see some effect of that but we want to see the mechanisms by which it will be achieved, we want to see the specific research programs, specific technologies and in the process of the one-year study, develop a strategy to get those out on the road. It's an insurance policy against the year 2000 and it certainly will be a major contributor to the further reductions in greenhouse gases that we need to achieve post-2000.

Senator LIEBERMAN. I agree with you and again, in earlier deliberations before this committee, I was struck when I first got into it about what a long lead time there is. As you mentioned, for the auto industry and the change models, and if we don't start some time with something more in the way of requirements, then we won't ever achieve it, even after the year 2000.

I have one other question in the transportation area. I gather at the workshop that was held on commercial transportation at the White House in June there was a lot attention paid to strategies for inducing freight traffic to move from less efficient to more efficient modes of transportation. I wonder if any actions are contemplated within the plan that has been submitted that would affect the commercial transportation sector?

Mr. DOWNEY. There are no specific commercial strategies in here, although we see shifts in that direction all the time and we'll be carrying those out for the regular programs. It's a major goal. The facilitating intermodal shipments, truck to train, truck-to-truck, creating corridors whereby the ports can be served with double sack rail shipments, we see that as supportive of these goals but not a specific strategy.

We've seen even in the last few weeks as fuel prices have risen in the west, part as a consequence of the energy tax, partly as a

consequence of clean air, that there are shifts already occurring from truck to rail.

Senator LIEBERMAN. Are the reasons for that beyond the tax? In other words, what is changing that is inducing that change?

Mr. DOWNEY. The other factor in the west has been the necessity for clean diesel fuel to be made available for the truckers. That has caused both a price increase and some temporary shortages. The combination of all those factors has indeed moved a considerable amount of traffic to the rails over this short period of time.

Senator LIEBERMAN. Do you think that the plan should be more aggressive on this?

Mr. DOWNEY. We think that much of those shifts will occur in any event as a consequence of peoples' economic behavior. Those are the kinds of baseline things that we did not put into the plan; we put into the plan things that would be stretches.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Senator BAUCUS. Thank you, Senator.

Did you contemplate any so-called silver bullets that you discarded? As we've explored all this, the catalytic converter helped dramatically reduce global source emissions as cars are much cleaner now because Congress told the auto industry you design, develop, manufacture and install a catalytic converter. They said, oh, no, can't do it, the technology is not there. So years ago, Congress said, you just do it. They did it and while they did it, they also found that it redesigned their manufacturing process to make that much more efficient so that they could actually make money on the deal.

I'm curious whether you've thought of any new breakthrough technologies, maybe the electric car as one which if we worked hard on, it might make major progress even though I generally agree with the proposition that the way we're going to make progress here is lots of different individual, private and public efforts which accumulate through specific reductions. Are there any silver bullets that you've thought of?

Mr. SUSSMAN. I think there are going to be some real technological breakthroughs of great significance which come out of this plan and some of the related activities. First, I am personally very excited about the clean car initiative because it seems to involve, I think, an unprecedented pooling of public and private resources to produce a major leap forward in automobile technology, but putting the transportation sector to one side, we are, I think, simulating innovation in many other areas which is going to be very significant. For example, EPA is going to take the lead on a market pool program for residential appliances just as we're going to try to use the golden carrots concept, which was so successful in producing a new type of refrigerator.

Senator BAUCUS. A 50 percent reduction in energy?

Mr. SUSSMAN. Right. And we are going to try to work with utilities and other partners to create incentives for breakthrough technologies for other types of appliances, for clothes dryers, for washers, for other common household appliances which are large energy users. So I think that we're going to see some real breakthroughs.

I think that we're going to see some of the same breakthroughs in other areas as well. Industrial transformers, for example, where we have an energy transformer program which we hope is going to

lead to new energy efficient transformer technology. So I think the technology is really going to boom under this program in some very exciting ways.

Senator BAUCUS. That leads to the next question, give us some examples of why you think that \$1.9 billion in Federal spending over these next years will result in an estimated \$60 billion in efficient stimulus to the economy. Flesh out a little bit why you think that's going to work.

Mr. SUSSMAN. I think that the answer is rooted in the partnership concept and the degree to which using Federal resources as a catalyst can result in action in the private sector on a much broader scale than in the Federal Government. Take the Green Lights Program for an example, we entered into an memorandum of understanding with a company that agrees to become a Green Lights partner. This company will spend money to audit its existing lighting appliances, it will spend money to purchase new lighting appliances because there is demand for new lighting appliances. The lighting manufacturers will produce more products; they will also make larger research and development investments.

Therefore, by getting a single company to sign an MOU under our Green Lights Program, we can have a ripple effect throughout the economy which will lead to significant investments, significant commitments of resources in several different sectors of the economy. That, I think, is the reason why our Federal investment is going to lead to a much larger investment by the private sector.

Senator BAUCUS. Mr. Pomerance, as I understand the joint implementation program, if an American company achieves efficiencies in its operation in a foreign country such as reductions of greenhouse gas emissions because of energy savings and whatever, that is not counted. What is the stimulus or incentive for that company to proceed in another country?

Mr. POMERANCE. A couple of points on that, Senator. First, it's important that the joint implementation program be seen in the context this was primarily a domestic effort, that the first step was the United States began to put its own house in order and hit these emission targets domestically. The joint implementation, as you suggest, offers an important opportunity to achieve emission reductions around the world because after all, this is a global problem. Emissions, wherever they come from, contribute to the problem.

There are a few reasons why companies might begin to enter the joint implementation projects under the U.S. initiative. In some States, for example, utilities have been required to reduce greenhouse gas emissions and they be permitted to use international offsets to do that. The Department of Energy program that has been announced where numerous utilities have signed up to reduce their own greenhouse gas emissions, some of those companies may do some of that abroad.

Third, there is a leadership question. There have been some projects in the past that companies have been concerned about the greenhouse problem seeking actually to offset their emissions by entering into projects abroad so that their net emissions would be zero.

Finally, and this is an important one, if the joint implementation regime can be proven viable, if it's a credible system, then it's im-

portant for companies to help demonstrate that so it can be a part of the future emission reductions because the thesis is that reductions through joint implementation maybe very cheap. As the marginal cost rises in the United States for reductions, other countries which are not nearly as efficient may provide opportunities for investment at a lower price to get global reduction.

By setting a leadership example, by proving the system, it may help lower the cost of emission reduction in the future. To the extent that companies go out and prove that such potential exist today, they may be helping to lower the cost of future emissions reduction.

Senator BAUCUS. This is bottom line driven?

Mr. POMERANCE. We think actually it can win for all parties. That is, countries with emission reduction requirements, developed countries, have incentive because they may find some of the costs are lower. Countries that receive the projects will get technology, financial flows, and elements of the sustainable development society as a result.

Senator BAUCUS. Thank you.

Senator Lieberman?

Senator LIEBERMAN. Two final questions. The first is just to point out that I'm grateful for the emphasis that the plan gives to the development of fuel cell technology which has been a particular interest of mine over the last 5 years because I do think it is a highly efficient, clean, new energy source that American companies, two of which happen to be located in the State of Connecticut, are doing some truly pioneering work. Our companies have not received the same kind of support, for instance, that the Japanese government is giving work in the private sector there in Japan because this is seen as a potentially big market and the next big business in the next century.

One of the things I wanted to ask is I know there are some demonstration projects through EPA in which fuel cell technology is being used quite creatively to capture methane from landfills. I wonder if not more could be done in that regard? Are you familiar program at all, Mr. Sussman?

Mr. SUSSMAN. Not specifically familiar with it but let me say that as one of the components of the plan, EPA will be able to have an outreach program to work with landfills to capture methane and use it as a fuel source. We can certainly explore the possibilities in that program of encouraging the use of fuel cell technology.

Senator LIEBERMAN. A final question. As I'm sure all of you know, in the Surface Transportation Act, Congress included \$6 billion for congestion mitigation and air quality by the States. It seems pretty clear that the intention of Congress here was to give this money to the States to help them do some creative things, to acknowledge what is clear in your testimony today that you understand the interrelationship of sectors. What we do in transportation here clearly affects our energy posture as it does the quality of our environment. Our hope was that this money would be available for some of the efforts that we encouraged and mandated the States to carry out to reduce the home to work trips by employees.

The record so far makes clear that the States are not using this money for those kinds of activity. In other words, I don't think the

States are really following the intention of Congress. I noted in the plan with appreciation that the Administration is going to review this. I just wanted to ask you your sense of what is happening out there and what guidelines you're going to be applying to the review of the expenditure of this considerable amount of money.

Mr. SUSSMAN. We do have, as part of the plan, a transportation efficiency strategy. You're absolutely right, one thing that we're going to do is evaluate how the congestion, mitigation and air quality money is now being spent. I think the hope is that we will begin to use that money for some innovative and creative concepts to reduce mitigation.

I am aware that some are disappointed with how the money is now being used. I think we have an opportunity to change that.

Mr. DOWNEY. We will be working with EPA on that. It relates to the issuance of planning regulations on ISTEA which were issued on Friday and the forthcoming issuance of conformity regulations, the Clean Air Act. It really is an integral planning process.

There have been, I think, some good results of the congestion, mitigation funds spent to date—58 percent have gone for transit-related improvements, though many of them are in the traditional purchases of buses or rail cars, but we think as the States become more familiar with this and as the mandates of the Clean Air Act are better perceived by them, we can move in this direction.

Senator LIEBERMAN. Thank you all. Thanks for the testimony, thanks for the plan. I will continue to prod and to oversee, but in doing so, I was thinking as Senator Chafee finished, that you probably did too good a job in educating him on this subject matter. Your students come back to haunt you.

I do want to say in the midst of fulfilling this role, I think the Administration has taken some very solid steps forward and I'm glad that we are once again at the lead internationally instead of being pulled along and suffering some of our embarrassment for inaction though in some ways such as the cost and the impact on energy conservation, there are some relatively short term benefits for us. This is a classic area in which we in government are trying to fulfill what might be called our trustee responsibility over the environment in a way that we will not, in our lifetimes, at least not until later in them, see the benefits of. It's the future we're worried about here and in that sense, I admire the willingness of the four of you and the Administration to come forward and lead, although some of the benefits are longer term.

Thank you.

Senator BAUCUS. I have another question of Mr. Pomerance. What is the likelihood that other countries are going to follow up and how quickly will they with the kind of actions that we are taking?

Mr. POMERANCE. The Convention requires that once it enters into force, which should be next spring, 6 months later countries submit national reports and for development, the OECD type countries, the U.S. plan would actually probably be a good example for them of a report that sets a standard for achievement. Other countries have to report on the measures that they've taken to reduce greenhouse gas emissions and they will be held accountable by both the public and their political systems, and international forces.

We've seen some plans, we will see more and then they will be compared, one to another to see the strengths and weaknesses of each.

Senator BAUCUS. Will the United States Government encourage other countries to proceed the same way that we have?

Mr. POMERANCE. It helps when we have a plan on the table. We do now and we will encourage other governments to do the same and we will participate in the review that the OECD will be conducting of half a dozen country plans to compare them, to look at the elements and see how well they are developed and how credible they are.

Senator BAUCUS. What about developing countries? As I recall the Chinese government participates in 10,000 megawatts additional power in the next 10 years. What is the United States Government's thought about technology transfer, about how to deal with the difference between developing countries?

Mr. POMERANCE. An excellent question. China in particular has now become I believe the second largest emitter after the U.S. of carbon dioxide, they use a tremendous amount of coal. Part of the response, I think, is incorporated in the joint implementation. That is to say that offers the opportunity for companies to invest in developing countries to limit greenhouse reductions but at the same time help grow the economy. The essential way that might be done is that the technologies that are utilized in the joint implementation scheme in our pilot program might jump the generations. I'd say the possibility exists that the technologies might improve the efficiency of generating capacity by a substantial amount above what they would otherwise be without that additional.

Senator BAUCUS. The point is the more we develop and proceed with the plan we have in this country, the more likely this will help develop new technology in developing countries.

Mr. POMERANCE. Absolutely.

Ms. TIERNEY. Can I give a concrete example? The Department of Energy, along with many of the other agencies of the Government, is working with the State Department to look at ways in which we can tackle some of the barriers to trade in electric power in China. One of the proposals that has come out of that effort—to which the Department is committed—is to put in place a clean coal, efficient coal technology demonstration project in China. We have put aside \$25 million for such a cost-shared project in China. We think that's a likely candidate for one of these joint implementation pilots so we can see what it looks like to evaluate emissions reductions.

We agree with you that this is an area of huge opportunity not only for our trade, not only for greenhouse gas emissions, but also for bringing some of our trading partners forward in some of the other interest areas of the United States.

Senator BAUCUS. Which is to say we're more likely to have more jobs in America using American technology rather than Japanese or German technology in China.

Ms. TIERNEY. Sure.

Mr. POMERANCE. One other component of the program. The U.S. has a country study program which several agencies are running jointly to refinance baseline studies of the greenhouse problem in developing countries looking at emission inventories to help build

the capability for planning for emission reductions, and look at vulnerabilities to climate change as establishing an infrastructure in those countries to help deal with these issues.

Senator BAUCUS. This has been very helpful. I commend all four of you and the Administration for this plan. It's solid, it's not overpromising, it's not overreaching, it's not grandiose. It's not glamorous but it's a good faith attempt to achieve the objective. Thank you again very much for your testimony. We will be visiting this issue again at an appropriate time in the future.

Ms. TIERNEY. Mr. Chairman, would you be willing to allow us to submit two documents for the record.

Senator BAUCUS. Absolutely.

The hearing is adjourned.

[Whereupon, at 12 p.m., the committee was adjourned, to reconvene at the call of the Chair.]

[A combined statement and responses to additional questions follow:]

United States Senate
Committee on Environment and Public Works

Hearing on
The Climate Change Action Plan
October 26, 1993

Combined Statement of

U.S. Environmental Protection Agency

U.S. Department of Energy

U.S. Department of State

U.S. Department of Transportation

Mr. Chairman, and Members of the Committee, thank you for the opportunity to present the President's Climate Change Action Plan. We appreciate also the opportunity to combine our written testimony into a single statement for the record. Our testimony today will summarize key features of the Action Plan, which was made available to the Committee last week.

The international scientific community agrees that climate change is the highest risk environmental problem we ultimately face. There is no doubt that human activities are increasing the atmospheric concentrations of greenhouse gases. Theoretical models predict that these increased concentrations will cause changes in regional and global climate systems, which could have serious adverse effects on human health, as well as on ecological and socio-economic systems. While the precise magnitude and patterns of climate change are uncertain, global warming is a growing, long-term threat with profound consequences that would take decades to reverse.

For these reasons, President Clinton committed his Administration to produce a plan to return U.S. greenhouse gas emissions to 1990 levels by the year 2000. The Climate Change Action Plan fulfills that commitment, and provides a critical first step in addressing the long-term threat. The Action Plan is the most specific, detailed, and comprehensive plan produced by any nation to date to reduce greenhouse gas emissions. Moreover, the plan demonstrates that there is economic opportunity for the United States in taking on this challenge. The actions detailed in the plan will expand markets for important U.S. technologies and services, create jobs in those sectors, and reduce the federal budget deficit. The plan is good for the global environment, for

the U.S. economy, and for the Federal budget.

Development of the Plan

In developing the plan, the Clinton Administration drew on innovative ideas from people in business, labor, government, and the environmental movement. After the President's Earth Day speech, the White House hosted a Conference on Global Climate Change to explore cost-effective ways of meeting the President's commitment. Three hundred invited participants shared their innovative ideas and experiences with nearly 800 people who attended. Prior to the Conference, six working groups were established to identify and analyze specific actions in energy demand, energy supply, transportation, methane and other greenhouse gases, greenhouse gas sinks, and joint implementation. The members of the working groups, which were drawn from White House offices and from agencies across the Executive Branch, participated in the Conference workshops and later analyzed the wide array of policy options that were discussed. The final Action Plan incorporates many of the options presented in the workshops into an integrated and coherent package of actions.

Two main principles guided the development of the plan as we sought to link the economy to the environment in innovative ways. First, we recognized that achieving the ambitious goal of returning greenhouse gas emissions to 1990 levels could offer significant economic opportunities -- and we were determined to seize these opportunities. Second, the plan was built upon models of successful programs that already exist in the public and private sectors. The programs in the plan are targeted towards proven winners; towards investments in energy

efficiency and other technologies which can simultaneously reduce emissions and make the economy more competitive.

Key Elements of the Action Plan

Without the Climate Change Action Plan, emissions of the major greenhouse gases (carbon dioxide, methane, nitrous oxides, and hydrofluorocarbons) are projected to grow by about 7 percent between 1990 and 2000, from 1,462 million metric tons of carbon equivalent (MMTCE) to 1,568 MMTCE. Therefore, the policies in the Action Plan must reduce projected U.S. greenhouse gas emissions by about 106 MMTCE in order to meet the goal.

The plan will attain the emission reduction goal by implementing nearly 50 specific actions that touch every sector of the economy. This is an economy-wide problem that requires economy-wide solutions. The plan accomplishes the goal in a cost-effective manner primarily by harnessing market forces. It leverages a modest government expenditure -- about \$1.9 billion between 1994 and 2000 -- which stimulates over \$60 billion over the same period in private sector investment in energy efficiency, renewable energy, and other technologies that help reduce greenhouse gas emissions. These investments, in turn, pay substantial dividends to consumers and firms in the form of reduced energy costs -- over \$60 billion in reduced costs between 1994 and 2000, with continuing cost savings of over \$200 billion between 2001 and 2010.

The Action Plan establishes groundbreaking public-private partnerships with key industries across all sectors of the economy to reduce all types of greenhouse gases. For example, the plan

contains new agreements with electric utilities to reduce greenhouse gas emissions, as well as agreements with electric motor manufacturers and industrial motor users. Agreements with chemical and aluminum producers will help reduce HFC and PFC emissions. It also includes measures to improve energy efficiency in the commercial, industrial and residential sectors. These energy efficiency improvements are especially cost-effective methods to reduce greenhouse gas emissions -- in fact, most of the emission reductions in the plan can be achieved at a profit for U.S. firms and consumers.

Two actions contained in this plan will also help reduce the Federal budget deficit. For example, the plan will allow workers the option of taking either employer-paid parking or its cash value as increased income instead -- providing a financial incentive to take public transportation or to carpool. While the "cash-out" income would be taxable, new federal revenues would only come from workers who voluntarily chose to exercise their new option. The plan will also give private developers an opportunity to invest in efficiency upgrades at Federal hydroelectric dams and market the additional power in exchange for lease and bonus payments.

Through this plan, the U.S. will aggressively promote more recycling, more efficient transportation systems, more reductions in harmful methane emissions from mining and agriculture. The plan protects forest resources that store carbon taken from the atmosphere. The Action Plan contains a pilot project of joint implementation, in order to gain experience in evaluating the emission reduction potential of international investments. The plan will also limit emissions of chlorofluorocarbon substitutes with high global warming potentials. And it

establishes a program to monitor the results of the plan and modify it if necessary to adapt to changing circumstances.

Each of the proposed actions is grounded in solid economic analysis. Each will be supported by the funding necessary for effective and rapid implementation. Many of the actions in the plan build upon proven programs and public/private partnerships that can quickly deliver results in order to meet the President's goal.

Conclusion

The Climate Change Action Plan reestablishes the U.S. as a world leader in protecting the global environment. Hopefully, it will be implemented in concert with other industrial countries as they move to produce their own detailed plans. This plan represents an aggressive first step by the U.S. that will help to build a healthier environment and a stronger economy for decades to come.

Thank you again for the opportunity to testify. We will be happy to answer any questions that the Committee may have.



United States Department of State
Washington, D.C. 20520

JUL 25 1994

Dear Mr. Chairman:

Thank you for your letter of October 28, 1993 to Rafe Pomerance. You requested that the Department answer a question submitted by Senator Robert Smith. I have enclosed this question and its answer.

Please do not hesitate to contact me if we can be of further assistance.

Sincerely,

Wendy R. Sherman

Wendy R. Sherman
Assistant Secretary
Legislative Affairs

The Honorable
Max Baucus,
Chairman,
Committee on Environment and Public Works,
United States Senate.

FOLLOW-UP QUESTION FROM SENATOR BOB SMITH
OF THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

Q. You have stated recently that Article 4 of the Convention on Climate Change authorizes the use of joint implementation as an available measure in the context of developed country commitments to the year 2000. Why doesn't the President's plan take advantage of this authority? Would not excessive reliance on domestic initiatives (at higher cost) decrease U.S. competitiveness vis-a-vis our major trading partners?

A. IN OUR VIEW, OTHER NATIONS MAY BE MORE OPEN TO JOINT IMPLEMENTATION IF THEY SEE SOME CONCRETE EXAMPLES OF REDUCTIONS VIA JOINT IMPLEMENTATION PILOT PROGRAMS. THE OCTOBER ACTION PLAN WAS DESIGNED TO MEET THE U.S. COMMITMENT SOLELY THROUGH DOMESTIC ACTIONS IN ORDER TO DEMONSTRATE U.S. LEADERSHIP IN RESPONDING TO THE THREAT OF CLIMATE CHANGE AND SHOW THAT THE UNITED STATES IS DEALING SERIOUSLY WITH OUR OWN GREENHOUSE GAS EMISSIONS.

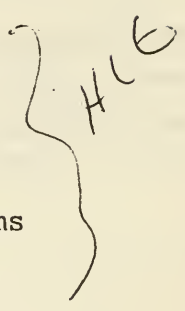
THE ADMINISTRATION INTENDS TO DEMONSTRATE THAT JOINT IMPLEMENTATION WILL BE A NET PLUS FOR GLOBAL CLIMATE CHANGE EFFORTS. WE ARE IN THE INITIAL STAGES OF LAUNCHING THE PILOT PROJECT -- WITH THE GUIDELINES AND CRITERIA STILL OUT FOR REVIEW. WE EXPECT THE PROJECT TO HELP ESTABLISH AN EMPIRICAL BASIS FOR DEVELOPING INTERNATIONAL CRITERIA FOR JOINT IMPLEMENTATION, TEST AND EVALUATE METHODS FOR MEASURING, TRACKING, AND VERIFYING COSTS AND BENEFITS OF PROJECTS, ENCOURAGE PRIVATE SECTOR INVESTMENT AND INNOVATION AND ENCOURAGE PARTICIPATING COUNTRIES TO STRENGTHEN THEIR CLIMATE PROGRAMS. THE RULES MUST DISCOURAGE PROJECT SUBMISSIONS WHICH, FOR EXAMPLE, PROJECT EMISSIONS REDUCTIONS THAT CANNOT BE VERIFIED,

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INVOLVE DOUBLE-COUNTING, OR DO NOT GO BEYOND WHAT WOULD OTHERWISE HAVE OCCURRED WITHOUT THE PROJECT. WE ALSO ARE MINDFUL THAT INTERNATIONAL EFFORTS TO DEVELOP AGREED CRITERIA FOR JOINT IMPLEMENTATION ARE CONTINUING.

Drafted: OES/EGC:HLGraham
1/12/94 EGC 5685 647-4069

Cleared: OES/EGC:DReifsnyder
OES/EGC:JPershing
L/OES:SBiniaz
OES:LStrachan
H:JSeEVERS
EPA:KHauser/DTirpak
DOE:DForrister/TWilliams
OSTP:RWatson
OEP:MChupka
NSC:DDoniger
OM:RTuccillo

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**Department of Energy**

Washington, DC 20585
December 8, 1993

The Honorable Max Baucus
Chairman
Committee on Environment and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

On October 26, 1993, Susan F. Tierney, Assistant Secretary, Policy, Planning and Program Evaluation, testified regarding the Climate Change Action Plan.

Enclosed are the answers to Senator Smith's questions to complete the record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Valerie Howard, on (202) 586-2032.

Sincerely,

A handwritten signature in dark ink, appearing to read "W. J. Taylor, III", is written over the typed name.

William J. Taylor, III
Assistant Secretary
Congressional, Intergovernmental
and International Affairs

Enclosure



QUESTION FROM SENATOR SMITH

Question 1: Even if the United States were to eliminate all of its greenhouse gas emissions, wouldn't concentrations of greenhouse gases in the atmosphere continue to rise (albeit more slowly) due to the rapid industrialization of nations like China and India?

Answer: According to the Intergovernmental Panel on Climate Change, a 60 percent or greater reduction in current global emissions would be required to stabilize their atmospheric concentrations at current levels.

According to the Energy Information Administration's International Energy Outlook 1993, the U.S. share of global greenhouse gas emissions is currently just 22 percent. This share is projected by EIA to decline to 20 percent by 2010, even without the actions contained in the Climate Change Action Plan. It follows that even a complete elimination of U.S. greenhouse gas emissions, whether or not coupled with stabilization of emissions in the rest of the world, would not stop the continued rise of atmospheric concentrations of greenhouse gases. As you know, we are not proposing to completely eliminate our emissions; we propose to reduce them to 1990 levels. Also, emission stabilization outside the United States is currently seen to be very unlikely given the rapid industrialization of nations like China and India.

This is not to imply, however, that an effort to achieve major reductions in U.S. greenhouse gas emissions would

be an exercise in futility. By undertaking an effort to reduce greenhouse gas emissions, the U.S. will be improving the prospects that emission reduction options similar to those being implemented domestically will be adopted in other countries. With this objective in mind, the U.S. has undertaken a multi-faceted campaign to develop and export efficient low-cost technologies that reduce greenhouse gas emissions, to eliminate wasteful practices that lead to emissions, and to work with other countries in developing emissions reduction programs.

QUESTION FROM SENATOR SMITH

Question 2: Under what Federal statute will most of the reductions in the President's plan occur?

Answer: The President's Climate Change Action Plan, designed to reduce U.S. greenhouse gas emissions to 1990 levels by the year 2000, is composed of nearly 50 new and expanded initiatives. It is estimated that these initiatives will reduce projected levels of greenhouse gas emissions by 109 million metric tons of carbon equivalent (MMTC). The bulk of this reduction will not come from a single initiative.

Many of the Action Plan's major initiatives were promulgated pursuant to the Energy Policy Act of 1992 (EPACT). We estimate that 40 per cent of the Action Plan's projected reductions are attributable to EPACT authorizations. For instance, the "Golden Carrot" and the "Motor Challenge" programs are authorized by EPACT. Furthermore, the Department of Energy will promulgate revised and more stringent energy-efficiency standards for eleven residential appliance categories (e.g., room air conditions, water heaters, kitchen ranges, television sets) pursuant to the Energy Policy and Conservation Act, as amended by the National Appliance Energy Conservation Act and EPACT.

ISBN 0-16-043991-4



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